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DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
JOSEPH A. HOLMES, DIRECTOR

COKE-OVEN ACCIDENTS IN THE UNITED STATES

DURING THE CALENDAR YEARS 1913 AND 1914

COMPILED BY

ALBERT H. FAY

WASHINGTON
GOVERNMENT PRINTING OFFICE
1915

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COKE-OVEN ACCIDENTS IN THE UNITED STATES DURING THE CALENDAR YEARS 1913 AND 1914.

Compiled by ALBERT H. FAY.

INTRODUCTION.

This paper, the first report of the Bureau of Mines on accidents at coke ovens in the United States, covers the calendar years 1913 and 1914. The results of the bureau's investigation show that during these two years 91 men were killed at coke ovens in the United States, 644 were seriously injured, and 4,059 slightly injured. This report includes the returns from 275 active plants in 1913 and 253 in 1914. In addition to these there were reported 76 idle plants in 1913 and 116 in 1914. As regards occupational hazards, the coke industry compares favorably with the quarry industry and the surface works of metal mines in the United States. Yet the fatality rate is higher than in many European coal mines.

The coke plants employed 24,345 men in 1913 and 22,313 in 1914; of this number 46 were killed in 1913 and 45 in 1914. Table 1 shows the fatality and injury ratios at coke ovens for these two years, with comparative figures for quarries, metal mines, and coal mines.

TABLE 1.—*Summary of accidents at* ***coke ovens*** *in the United States,* ***1913*** *and* ***1914.***

	1913			1914		
	Killed.	Seriously injured.	Slightly injured.	Killed.	Seriously injured.	Slightly injured.
Accidents, by causes:						
Cars, larries, and motors	13	48	74	5	32	103
Railway cars and locomotives	7	41	109	9	18	53
Coke-drawing machines	6	19	41	4	20	51
Electricity	5	8	35	5	1	23
Falls of persons	4	78	263	6	77	257
Hand tools	0	22	314	1	21	278
Suffocation from gases	1	1	26	0	1	10
Burns	2	36	343	2	39	260
Other causes	8	89	967	13	93	872
Total number killed or injured	**46**	**342**	**2,172**	**45**	**302**	**1,887**
Accidents, by States:						
Alabama	3	37	497	5	34	268
Colorado	2	4	6	2	1	3
Illinois	2	45	544	3	33	386
Kentucky	1	6	39	2	5	122
Ohio	0	3	54	5	13	99

TABLE 1.—*Summary of accidents at coke ovens in the United States, 1913 and 1914*—Continued.

	1913			1914		
	Killed.	Seriously injured.	Slightly injured.	Killed.	Seriously injured.	Slightly injured.
Accidents, by States—Continued.						
Pennsylvania	28	138	426	21	142	425
Tennessee	0	1	2	.....	.....	2
Virginia	1	4	4	2	3	6
West Virginia	1	3	26	1	5	29
Other States	8	101	574	4	66	547
Total number killed or injured	**46**	**342**	**2,172**	**45**	**302**	**1,887**
Number killed or injured per 1,000 employees:						
Coke ovens	**1.89**	**14.05**	**89.22**	**2.02**	**13.53**	**84.57**
Quarries	1.72	10.28	62.55	.....	.....	.....
Metal mines (surface only)	2.06	21.75	92.13	.....	.....	.....
Metal mines (total)	3.54	30.50	140.25	.....	.....	.....
Coal mines (total)	3.73	.....	.....	3.30	.....	.....

As shown in Table 10, the number of coke establishments in 1913 was 551, with 102,650 ovens. The bureau's report embraces 82 per cent of the ovens as indicated by the accompanying table. A number of active plants did not operate all of their ovens, so that the total number of idle ovens includes more ovens than is represented by the idle plants only. Although the accident figures thus collected are not complete for the entire industry, yet they are sufficiently representative to point out some of the hazards of this class of work. No distinction has been made concerning the type of ovens in use.

Plants reporting, showing total number of ovens represented.

Year.	Plants reporting.		Ovens.		
	Active.	Idle.	In operation.	Idle.	Total.
1913	275	76	67,526	16,520	84,046
1914	253	116	49,895	33,244	83,139

ACKNOWLEDGMENTS.

The data presented in this paper was voluntarily supplied by the officials and managers of the coke companies at the request of the bureau, there being no law compelling coke operators to render a report. The bureau thanks the operators for their hearty cooperation, and invites suggestions whereby the annual report of coke-oven accidents may be improved to best serve the industry.

SERIOUS AND SLIGHT INJURIES.

The definition of an accident, which is of fundamental importance, is different among the various mining and metallurgical companies. One operator may require a detailed report of any casualty, however slight, that delays the worker, or that draws blood; another may not consider an accident worthy of record that does not come to the attention of the foreman or shift boss.

The higher accident rate in one State as compared with those of other States may be due to the fact that more complete records have been kept. Companies employing only a few men do not, as a rule, keep a complete register of the serious and slight injuries; hence these ratios in some States may be low, but such low rates do not necessarily indicate that the danger is less than in an adjoining State.

SERIOUS INJURY.

The distinction made in this report between a serious and a slight injury is entirely arbitrary and is in accordance with that used by the bureau in the collection of mine and quarry accidents since 1911. A line had to be drawn at some definite point, and hence a serious accident is considered in this report as one that would disable a man and keep him from duty 20 days or more. This class includes such injuries as broken arms and legs, loss of eye, and severe cuts and bruises.

SLIGHT INJURY.

A slight injury is considered as one that involves a loss of time of more than 1 day but less than 20 days. Under this class may be placed such injuries as cuts, sprains, mashed fingers, bruises, dirt in eye, and slight burns. Of course any slight injury may become infected and thus result in a serious accident as defined above.

REVISED CLASSIFICATION OF INJURIES FOR 1915.

Many of the States now have compensation laws, and in order to conform with their classifications the bureau's classification of serious and slight injuries for 1915 will be on a 14-day (2 weeks) basis instead of 20-day, as at present. Therefore, it will facilitate the rendering of the report for 1915, if in keeping records for 1915, all operators will classify injuries as fatal, permanent disability, serious, and slight; a serious injury being one causing a disability of more than 14 days but not permanent, and a slight injury as involving a loss of time of more than 1 day but less than 15 days.

CAUSES OF ACCIDENTS.

The accompanying table shows that 37 per cent of the fatalities resulted from haulage accidents caused by cars, larries, and motors; 11 per cent of the fatalities was due to coke-drawing machines, 11 per per cent to electricity, and 11 per cent to falls of persons.

Of the serious injuries 21.6 per cent was due to haulage systems and 24.1 per cent to falls of persons. Of the slight injuries 8.3 per cent was due to haulage systems; 12.2 per cent to falls of persons; 14.6 per cent to hand tools, and 14.9 per cent to burns. The fact that 37 per cent of the fatalities at coke ovens is due to haulage systems shows that greater care and precaution should be taken to safeguard the employees who operate or work about or near transportation equipment. Inasmuch as electric haulage is used extensively at coke plants, a large percentage of the electrical accidents may also be classified with those resulting from haulage systems, so that over 40 per cent of all the fatalities are from haulage accidents. In this department of the coking industry there seems to be an excellent field for accident reduction.

Percentage of accidents at ***coke ovens*** *in the United States, classified by causes, for 1913 and 1914 combined.*

	Killed.	Seriously injured.	Slightly injured.
	Per cent.	*Per cent.*	*Per cent.*
Haulage	37.4	21.6	8.3
Coke-drawing machines	11.0	6.1	2.2
Electricity	11.0	1.4	1.3
Falls of persons	11.0	24.1	12.2
Hand tools	1.0	6.6	14.6
Suffocation from gases	1.0	0.3	1.0
Burns	4.4	11.6	14.9
Other causes	23.1	28.3	45.5

STATISTICAL TABLES.

Table 1 shows by causes and States the number of men killed and injured as well as the number of men killed and injured per 1,000 employed, in comparison with quarries, metal mines, and coal mines.

Tables 2 and 3 show by States the number of active plants, ovens in operation, men employed, and number killed and injured, with fatality and injury ratio per 1,000 employed.

Tables 4 and 5 show the number of fatalities by causes and by by States; Tables 6, 7, 8, and 9 show the nonfatal injuries by the same classification.

Table 10 shows the total amount and value of the coke produced in the United States from the beginning of the industry to and including 1913. Table 11 shows the amount of coke produced by States, and the amount of coal used for the manufacture of coke during the years 1910 to 1913, inclusive.

TABLE 2.—*Number of men employed, number of days worked, and number of men* ***killed*** *and* ***injured*** *at* ***coke ovens*** *in the United States, in the calendar year* ***1913.***

State.	Plants active.	Ovens in operation.	Employés.	Days' work done.	Average days active.	Killed.		Seriously injured.		Slightly injured.		Widows.	Orphans.
						Total.	Per 1,000 employed.	Total.	Per 1,000 employed.	Total.	Per 1,000 employed.		
Alabama	21	4,686	2,591	739,741	286	3	1.16	37	14.28	497	191.82	2	6
Colorado	6	1,975	1,359	389,067	286	2	3.48	4	6.96	6	10.43	1	2
Illinois	4	568	1,259	446,089	354	2	1.59	45	35.74	544	432.09	2	4
Kentucky	7	876	465	164,246	353	1	2.15	6	12.90	73	156.97		
Ohio	4	624	338	97,155	289			9	26.63	54	159.76		
Pennsylvania	6	42,470	12,344	3,564,490	289	23	2.27	138	11.18	436	34.51	8	21
Tennessee	131	1,715	420	97,894	233			1	2.38	2	4.76		
Virginia	8	2,883	986	282,809	284			4	4.02	4	4.02		
West Virginia	13	7,660	1,849	487,615	263	1	1.01	4	4.03	14	14.13		
Other States a	68	4,346	3,497	1,087,960	311	8	2.29	101	28.88	574	164.14	4	3
Total	275	67,326	24,345	7,000,862	288	46	1.89	342	14.05	2,172	89.22	17	36

a To avoid disclosing information relating to individual operators, statistics for those States in which there were less than 4 plants are not shown separately. In 1913 these States were Georgia, Indiana, Kansas, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New Mexico, New York, Utah, Washington, and Wisconsin.

TABLE 3.—*Number of men employed, number of days worked, and number of men* ***killed*** *and* ***injured*** *at* ***coke ovens*** *in the United States, in the calendar year* ***1914.***

State.	Plants active.	Ovens in operation.	Employees.	Days' work done.	Average days active.	Killed.		Seriously injured.		Slightly injured.		Widows.	Orphans.
						Total.	Per 1,000 employed.	Total.	Per 1,000 employed.	Total.	Per 1,000 employed.		
Alabama	20	3,455	2,281	741,013	325	5	2.19	34	14.91	268	117.49	2	1
Colorado	7	1,418	458	124,704	272	2	4.37	1	2.18	3	6.55		
Illinois	4	485	1,117	407,705	365	3	2.69	33	29.54	386	345.57	1	1
Kentucky	5	705	496	138,108	303	2	4.69	5	10.46	132	266.74		
Ohio	6	782	457	135,622	301	2	3.67	15	20.15	99	191.49	3	11
Pennsylvania	190	32,425	11,991	3,163,715	264	21	1.75	142	11.84	425	35.44	13	43
Tennessee	5	700	191	57,964	303					2	10.47		
Virginia	14	2,032	884	219,779	249	2	2.26	3	3.39	6	6.79	1	1
West Virginia	21	4,622	1,466	441,773	301	1	2.27	5	3.55	29	20.60	1	
Other States[a]	21	3,623	3,010	1,021,869	339	4	1.33	66	21.93	547	181.73	4	12
Total	233	49,865	22,313	6,372,259	286	45	2.02	302	13.53	1,897	84.97	25	69

[a] To avoid disclosing information relating to individual operators, statistics for those States in which there were less than 4 plants are not shown separately. In 1914 these States were Georgia, Indiana, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New Mexico, New York, Utah, Washington, and Wisconsin.

TABLE 4.—*Number of men* ***killed*** *at* ***coke ovens*** *in the United States, by causes, in the calendar year* ***1913.***

State.	Cars, larries, and motors.	Railway cars and locomotives.	Coke-drawing machines.	Electricity.	Falls of persons.	Hand tools.	Suffocation from gases.	Burns.	Other causes.	Total.
	1	2	3	4	5	6	7	8	9	
Alabama	2	1								3
Colorado									2	2
Illinois	1								1	2
Kentucky		1								1
Ohio										
Pennsylvania	8	5	6	3	1			2	3	28
Tennessee										
Virginia	1									1
West Virginia					1					1
Other States[a]	1			2	2		1		2	8
Total	13	7	6	5	4		1	2	8	46

[a] Includes Georgia, Indiana, Kansas, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New Mexico, New York, Utah, Washington, and Wisconsin.

TABLE 5.—*Number of men* ***killed*** *at* ***coke ovens*** *in the United States, by causes, in the calendar year* ***1914.***

State.	Cars, larries, and motors.	Railway cars and locomotives.	Coke-drawing machines.	Electricity.	Falls of persons.	Hand tools.	Suffocation from gases.	Burns.	Other causes.	Total.
	1	2	3	4	5	6	7	8	9	
Alabama		1	1	1	1				1	5
Colorado	1					1				2
Illinois		1	1						1	3
Kentucky	1								1	2
Ohio		2	1						2	5
Pennsylvania	3	4	1	4	2				7	21
Tennessee										0
Virginia		1			1					2
West Virginia									1	1
Other States[a]					2			2		4
Total	5	9	4	5	6	1	0	2	13	45

[a] Includes Georgia, Indiana, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New Mexico, New York, Utah, Washington, and Wisconsin.

TABLE 6.—*Number of men* ***seriously injured*** *at* ***coke ovens*** *in the United States, by causes, in the calendar year* ***1913.***

State.	Cars, larries, and motors.	Railway cars and locomotives.	Coke-drawing machines.	Electricity.	Falls of persons.	Hand tools.	Suffocation from gases.	Burns.	Other causes.	Total.
	1	2	3	4	5	6	7	8	9	
Alabama	13	5	.....	.....	5	1	.....	3	10	37
Colorado	2	.....	.....	.....	1	.....	.....	.....	1	4
Illinois	3	1	.....	3	12	1	1	8	16	45
Kentucky	.....	.....	.....	.....	4	.....	.....	.....	2	6
Ohio	1	.....	.....	.....	.....	1	.....	.....	1	3
Pennsylvania	17	29	9	1	35	13	.....	5	29	138
Tennessee	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Virginia	1	.....	.....	1	.....	1	.....	1	.....	4
West Virginia	1	.....	.....	.....	.....	.....	.....	.....	2	3
Other States[a]	9	6	10	3	21	5	.....	19	28	101
Total	48	41	19	8	78	22	1	36	89	342

[a] Includes Georgia, Indiana, Kansas, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New Mexico, New York, Utah, Washington, and Wisconsin.

TABLE 7.—*Number of men* ***seriously injured*** *at* ***coke ovens*** *in the United States, by causes, in the calendar year* ***1914.***

State.	Cars, larries, and motors.	Railway cars and locomotives.	Coke-drawing machines.	Electricity.	Falls of persons.	Hand tools.	Suffocation from gases.	Burns.	Other causes.	Total.
	1	2	3	4	5	6	7	8	9	
Alabama	5	2	3	.....	7	4	1	6	6	34
Colorado	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Illinois	3	3	2	.....	2	5	.....	4	14	33
Kentucky	1	.....	.....	.....	2	.....	.....	1	1	5
Ohio	1	.....	1	.....	4	.....	.....	4	3	13
Pennsylvania	16	11	7	.....	44	5	.....	11	48	142
Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	0
Virginia	1	.....	1	1	.....	.....	.....	.....	.....	3
West Virginia	.....	1	2	.....	2	.....	.....	.....	.....	5
Other States[a]	4	1	4	.....	16	7	.....	13	21	66
Total	32	18	20	1	77	21	1	39	93	302

[a] Includes Georgia, Indiana, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New Mexico, New York, Utah, Washington, and Wisconsin.

TABLE 8.—*Number of men* ***slightly injured*** *at* ***coke ovens*** *in the United States, by causes, in the calendar year* ***1913.***

State.	Cars, larries, and motors.	Railway cars and locomotives.	Coke-drawing machines.	Electricity.	Falls of persons.	Hand tools.	Suffocation from gases.	Burns.	Other causes.	Total.
	1	2	3	4	5	6	7	8	9	
Alabama	22	20	10	4	41	100	15	107	178	497
Colorado	.....	.....	.....	.....	2	.....	.....	.....	4	6
Illinois	4	12	1	12	59	75	.....	72	309	544
Kentucky	.....	2	.....	.....	6	2	.....	4	25	39
Ohio	4	3	.....	1	8	6	.....	3	29	54
Pennsylvania	27	47	23	11	62	47	5	56	148	426
Tennessee	.....	.....	.....	.....	.....	2	.....	.....	.....	2
Virginia	.....	.....	.....	.....	1	1	.....	1	1	4
West Virginia	4	5	1	1	6	2	.....	5	2	26
Other States[a]	13	20	6	6	78	79	6	95	271	574
Total	74	109	41	35	263	314	26	343	967	2,172

[a] Includes Georgia, Indiana, Kansas, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New Mexico, New York, Utah, Washington, and Wisconsin.

TABLE 9.—*Number of men* ***slightly injured*** *at* ***coke ovens*** *in the United States, by causes, in the calendar year* ***1914.***

State.	Cars, larries, and motors.	Railway cars and locomotives.	Coke-drawing machines.	Electricity.	Falls of persons.	Hand tools.	Suffocation from gases.	Burns.	Other causes.	Total.
	1	2	3	4	5	6	7	8	9	
Alabama	16	7	11	7	18	67	.....	54	88	268
Colorado	1	.....	.....	.....	.....	.....	.....	1	1	3
Illinois	5	7	.....	6	46	78	2	49	193	386
Kentucky	5	1	.....	.....	13	7	.....	16	80	122
Ohio	5	2	1	1	13	14	1	18	44	99
Pennsylvania	43	24	23	4	74	48	3	37	169	425
Tennessee	1	.....	.....	.....	.....	.....	.....	.....	1	2
Virginia	1	.....	.....	.....	1	.....	.....	1	3	6
West Virginia	2	2	.....	.....	5	2	.....	2	16	29
Other States[a]	24	10	16	5	67	62	4	82	277	547
Total	103	53	51	23	237	278	10	260	872	1,887

[a] Includes Georgia, Indiana, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New Mexico, New York, Utah, Washington, and Wisconsin.

TABLE 10.—*Statistics of the manufacture of* **coke** *in the United States, 1850–1913.*[a]

Year.	Establishments.	Number of ovens.	Coal used (short tons).	Coke produced (short tons).	Value of coke at ovens.	Price per ton at ovens.	Percentage yield of coal in coke.	Number employed.[b]
1850[b]	4				$15,250			14
1860[b]	21				189,844			198
1870[b]	25				1,132,386			528
1880	186	12,372	5,237,741	3,338,306	6,631,267	$1.99	63.0	3,142
1881	197	14,119	6,546,662	4,113,760	7,725,175	1.88	63.0	.....
1882	215	16,356	7,577,648	4,793,321	8,462,167	1.77	63.0	.....
1883	231	18,304	8,516,670	5,464,721	8,121,607	1.49	64.0	.....
1884	250	19,557	7,961,974	4,873,805	7,242,878	1.49	61.0	.....
1885	233	20,116	8,071,126	5,106,696	7,629,118	1.49	63.0	.....
1886	222	22,597	10,688,972	6,845,369	11,153,366	1.63	64.0	.....
1887	270	26,001	11,859,752	7,611,705	15,321,116	2.01	64.0	.....
1888	261	30,059	12,945,350	8,540,030	12,445,963	1.46	66.0	.....
1889	252	34,165	15,960,973	10,258,022	16,690,301	1.62	64.0	8,998
1890	253	37,158	18,005,209	11,508,021	23,215,302	2.02	64.0	.....
1891	243	40,245	16,344,540	10,352,688	20,323,216	1.97	63.0	.....
1892	261	42,002	18,813,337	12,010,829	23,536,141	1.96	64.0	.....
1893	258	44,201	14,917,146	9,477,580	16,523,714	1.74	63.5	.....
1894	260	44,772	14,348,750	9,203,632	12,328,856	1.34	64.0	.....
1895	265	45,565	20,848,323	13,333,714	19,234,319	1.44	64.0	.....
1896	341	46,944	18,694,422	11,788,773	21,660,729	1.84	63.0	.....
1897	336	47,668	20,907,319	13,288,984	22,102,514	1.66	63.5	.....
1898	341	48,383	25,249,570	16,047,209	25,586,699	1.59	63.6	.....
1899	343	49,603	30,219,343	19,668,569	34,670,417	1.76	65.1	16,999
1900	396	58,484	32,113,553	20,533,348	47,443,331	2.31	63.9	.....
1901	423	63,931	34,207,965	21,795,883	44,445,923	2.04	63.7	.....
1902	456	69,069	39,604,007	25,401,730	63,339,167	2.49	64.1	.....
1903	500	79,334	39,423,525	25,274,281	66,498,664	2.63	64.1	.....
1904	507	83,599	36,531,608	23,661,106	46,144,941	1.95	64.8	18,981
1905	519	87,564	49,530,677	32,251,129	72,476,196	2.25	65.1	.....
1906	532	93,901	55,746,374	36,401,217	91,608,034	2.52	65.3	.....
1907	552	99,680	61,946,109	40,779,564	111,539,126	2.74	65.8	.....
1908	551	101,218	39,440,837	26,033,518	62,483,983	2.40	66.0	.....
1909	579	103,982	59,354,937	39,315,065	89,965,483	2.29	66.2	29,273
1910	578	104,440	63,068,327	41,708,810	99,742,701	2.39	66.1	.....
1911	570	103,879	53,278,248	35,551,489	84,130,849	2.37	66.7	.....
1912	559	102,230	65,577,862	43,983,599	111,805,113	2.54	67.1	.....
1913	551	102,650	69,239,190	46,299,530	128,922,273	2.78	66.9	.....

[a] Compiled from Mineral Resources of the United States, U. S. Geol. Survey.
[b] Census reports.

TABLE 11.—*The amount of coal used for coking purposes and the amount of coke produced, by States, 1910–1913.*[a]

[Short tons.]

State.	1910		1911		1912		1913	
	Coal used.	Coke produced.	Coal used.	Coke produced.	Coal used.	Coke produced.	Coal used.	Coke produced.
Alabama	5,272,322	3,249,027	4,411,208	2,781,531	4,585,498	2,975,489	5,214,323	3,323,664
Colorado	[b] 2,602,266	[b] 1,346,211	[b] 1,810,335	951,748	1,479,112	972,941	1,349,743	879,491
Georgia	80,019	43,814	72,677	37,553	87,300	43,158	82,871	42,747
Illinois	1,972,965	1,314,604	2,067,870	1,610,212	2,316,307	1,704,944	2,481,198	1,859,533
Indiana	(c)	(c)	(c)	816,411	3,149,874	2,016,339	3,335,136	2,727,025
Kansas	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
Kentucky	104,103	53,857	118,255	66,099	307,102	191,555	512,245	317,084
Montana	(c)	(c)	(c)	(c)	344,749	220,459	530,351	355,752
New Jersey	661,494	401,646	620,639	381,927	679,249	413,909	788,172	487,945
New Mexico	910,293	632,459	953,067	686,172	1,063,198	794,613	1,067,207	758,486
New York	413,069	282,315	456,222	311,382	561,426	385,669	507,417	351,846
Ohio	39,455,785	26,315,907	32,175,655	21,923,055	41,283,582	27,458,666	43,195,801	28,733,444
Oklahoma	597,658	322,756	628,118	330,418	865,861	370,076	894,085	364,578
Pennsylvania	(d)	(d)	(d)	(d)	(c)	(c)	(c)	(c)
Tennessee	2,910,742	1,455,655	1,420,303	910,411	1,526,989	947,947	1,963,259	1,178,603
Utah	2,314,222	1,488,337	1,487,203	940,180	1,526,693	940,299	2,113,786	1,301,221
Virginia	6,226,234	3,803,850	3,754,561	2,291,049	4,061,702	2,465,986	4,034,251	2,472,752
West Virginia	2,980,174	2,109,772	4,002,047	2,832,471	3,278,270	2,259,589	3,296,345	2,345,329
Other States								
Total (short tons)	63,068,327	41,708,810	53,278,248	35,551,489	65,577,862	43,983,599	69,239,190	46,299,530
Total value	$74,646,393	$99,742,701	$84,113,054	$84,130,849	$86,918,952	$111,805,113	$100,561,439	$128,922,273

[a] Compiled from Mineral Resources of the United States, U. S. Geol. Survey.
[b] Includes Utah.
[c] Included with other States having less than three producers.
[d] Included with Colorado.

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